heat up to the verge of its fusion. This increase of resistance is not caused by the increased density of the current, by the increased distance of molecules, or the employment of molecular force in generating heat; but is exactly proportional to the temperature. The same is the case with copper wire, and the amount of change bears in both the same ratio to the original resistance. This change should be attended to in all measures of resistance.

The heat generated by a current is as the product of its square into the *actual* resistance, but that attained by a wire ignited in air as the square root of this product.

The cooling power of air is, *in these experiments*, as the temperature; that of radiation as its square.

A wire thus ignited is dark at the two extremities, but the temperature rapidly rises as the distance from them increases, and soon becomes uniform over a large extent of the wire.

Its thermic equation shows that this uniform temperature exceeds the mean by an amount varying from a seventh to a tenth.

The Rev. Dr. Robinson next proceeded to notice a fact of some interest which he lately observed with the Rosse telescope. It related to a remarkable planetary nebula, Herschel's figure 44. This looks, in smaller instruments, like an oval disc, reminding one of the planet Jupiter; but it appears to be a combination of the two systems which he had formerly described. In both these the centre consists of a cluster of tolerably large stars: in the first, surrounded by a vast globe of much smaller ones; in the other by a flat disc of very small stars, which, when seen edgeways, has the appearance of a ray. Now this nebula, which he had recently observed through Lord Rosse's telescope, has the central cluster, the narrow ray, and the surrounding globe. He would also add, as a remarkable proof of the defining power of this vast instrument, that he saw with it, for the first time, the blue companion of

the well-known γ Andromedæ, distinctly, as two neatly separated stars, under a power of 828. It was discovered by the celebrated Struve, with the great Pulkova Refractor, and is a very severe test. He further wished to mention that, as La Place had anticipated, the ring of Saturn, which was quite visible, showed irregularities, which are most probably mountains, on its eastern side.

The President expressed the high sense which he entertained of the value of Dr. Robinson's researches on so important a subject as electric conduction; and observed that the Academy must feel deeply indebted to Dr. Robinson for the valuable and interesting information which he had afforded them on that point, and also with regard to the nature of the *nebulæ*, as shewn by Lord Rosse's telescope.

The Rev. Dr. Robinson then read the following communication descriptive of the contents of an ancient bronze vessel found in the King's County, and now belonging to the collection of the Earl of Rosse. The antiquarian relics contained in this vessel comprised several celts, some spear-heads, gouges, and curiously constructed bells; they were composed of a beautiful hard bronze, in very fine preservation. The composition of the metal itself, and the style of workmanship evinced in the various articles, argued no mean degree of metallurgic skill in their fabrication. Several of those interesting relics were exhibited to the members; and drawings, which were pronounced to be admirable in their fidelity and minuteness, were displayed of the several implements of war and husbandry which were not exhibited.

"Several years ago, I remarked this vessel in the collection of the Earl of Rosse, and the singularity of its contents made me suppose a description of it might interest the Academy. I, however, found it impossible to acquire any information as to the locality or time of its discovery till now. It had been